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|-------------------------------|-----------------------------------|---------------------|
| <b>Notice of Allowability</b> | <b>Application No.</b>            | <b>Applicant(s)</b> |
|                               | 10/830,169                        | SHINBATA, HIROYUKI  |
|                               | Examiner<br>Aklilu K. Woldemariam | Art Unit<br>2624    |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 01/03/2005.
2.  The allowed claim(s) is/are 1,5-8 and 16 (now remembered 1-6 for issue).
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

- 1.  Notice of References Cited (PTO-892) ✓
- 2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3.  Information Disclosure Statements (PTO/SB/08);  
Paper No./Mail Date \_\_\_\_\_.
- 4.  Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 5.  Notice of Informal Patent Application
- 6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
- 7.  Examiner's Amendment/Comment ✓
- 8.  Examiner's Statement of Reasons for Allowance ✓
- 9.  Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. The Amendment filed on 12/06/2007 have entered and made of record.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Brad Scheller on February 14, 2008.

The application has been amended as follows:

*Claims 3 and 15 have been cancelled.*

In claim 1, please replace the subject matter in the claim with the following:

1. *A diagnosis support apparatus which supports diagnosis by processing an image, comprising:*

*an enhancement unit configured to enhance a circular shadow existing in an image by enhancing a pixel value gradient of the circular shadow while suppressing an overall pixel value gradient of the image; and*

*wherein the enhancement unit calculates a normalized gradient of each pixel of the image, and determines a pixel value of a predetermined pixel on the basis of a sum of inner products of normalized gradients of a plurality of surrounding pixels on a circumference at a predetermined distance from the predetermined pixel and unit vectors extending from the plurality of surrounding pixels to the predetermined pixel.*

*an extraction unit configured to extract an isolated shadow from the image enhanced by said enhancement unit by using a disk shaped morphological filter and a ring shaped morphological filter.*

### **REASONS FOR ALLOWANCE**

3. Claims 1, 5-8 and 16 allowed over the prior art of record.
4. The following is an examiner's statement of reasons for allowance: In addition to the teachings of the claims 1 and 8, as a whole, closest art of record failed to teach or suggest, among other thing,

*"wherein the enhancement unit calculates a normalized gradient of each pixel of the image, and determines a pixel value of a predetermined pixel on the basis of a sum of inner products of normalized gradients of a plurality of surrounding pixels on a circumference at a predetermined distance from the predetermined pixel and unit vectors extending from the plurality of surrounding pixels to the predetermined pixel."*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

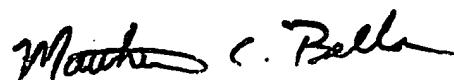
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Samir Ahmed  
SPE  
Art Unit 2624

A.W.  
01/23/2008



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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600